

Work Order ID 139092

Friday, November 13, 2015 11:22:27 AM

139092

Page 1

Item ID: D4857-M Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Wiper Deflector
 Start Date: 11/13/2015 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 11/13/2015 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: MCS Date: NOV 18 2015 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4857	F

100

0.00

100

Purchasing

Purchasing

Memo

Issue P/O: 30528
 Possible supplier: CARBON BY DESIGN
 Manufacture as per dwg D4857-M
 Prime Deflector as per dwg (SEE NOTE 4)
 Certificate of Conformity release note is required.

0.00

CY NOV 20 2015 4

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Packaging

Memo

0.00

4X SP15-12-09

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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Page 2

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				(4)			DAS 38 9-00 DEC 10 2015
130 *130* Packaging Packaging	Identify as per dwg & Stock Location <i>CCF136A</i> Memo	0.00 0.00				4			DEC 15 2015
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.01				MLJ			DEC 15 2015 MLJ DEC 15 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																
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Picklist Print

Friday, November 13, 2015 11:22:26 AM

Page 1

Work Order ID: 139092

139092

Parent Item: D4857-M

D4857-M

Parent Item Name: Wiper Deflector

Start Date: 11/13/2015

Required Date: 11/13/2015

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 14.05.21 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4857-P		Purchased	No				Each	0.0000		4			
D4857-P									**				
Wiper Deflector													

4X SP15-12-09.

DQA: _____ Date: _____



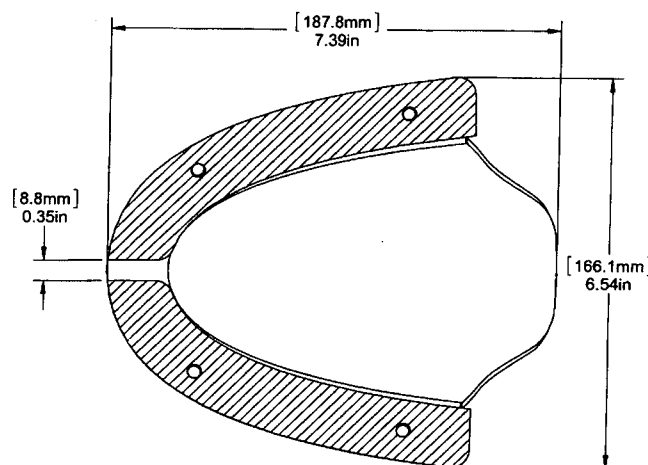
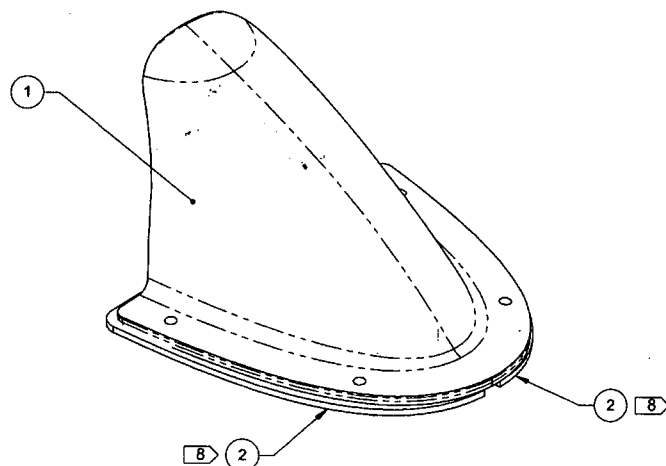
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
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Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

ITEM	QTY	P/N	DESCRIPTION
	X	D4857-041	WIPER DEFLECTOR ASSY
1	1	D4857-1	WIPER DEFLECTOR
2	2	D4944-1	GASKET



D4857-041 WIPER DEFLECTOR ASSY A

RELEASED

2015 JUN 08

ECN 15-58Z CM

139092 MJS
15-11-18

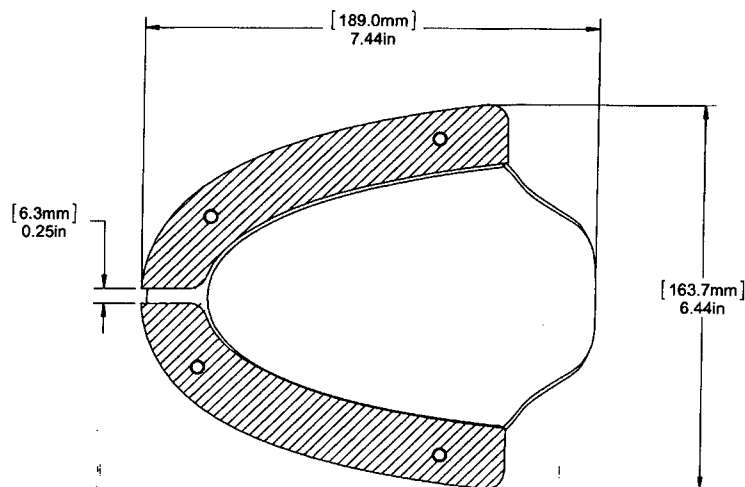
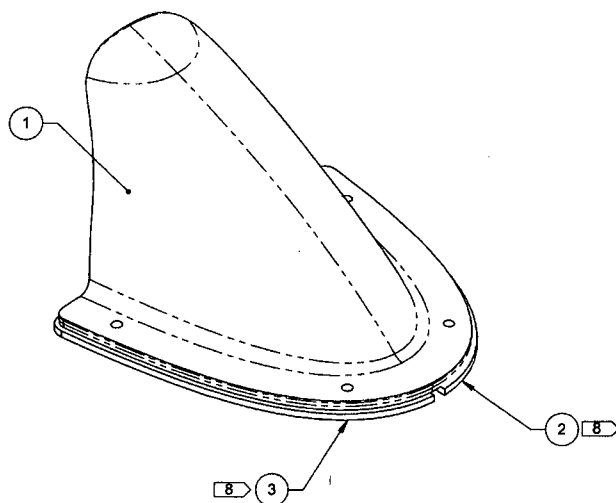
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-041, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D4944-1 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

F	SHT 1 ADDED -041. ADDED D4857-2M (SHEET 8) AND RELABELED D4857-M TO D4857-1M (ZN B5-7). UPDATED D4757-044 (ZN B5-3). REVISED NOTES 1, 8 AND 10 (ZN A8-4, ZN A8-5, ZN A8-6, ZN A8-7, ZN A8-8). UPDATE PART WEIGHTS	AK / AJS	15.06.03
E	REVISE NOTE 6) (ZN A8-1, A8-2, A8-3); AND NOTE 8) (ZN A8-1, A8-2, A8-3)	AK	14.06.05
D	ADDED D4857-043 (ZN C7-1), D4857-044 (ZN C7-2), D4857-3 (ZN C7-4), D4857-4 (ZN C7-5) AND D4857-M (ZN C7-6)	AK	14.05.13
C	ADDED 4 MOUNTING HOLES	DW	13.12.09
B	REVISED BOM, DRAWING VIEWS, NOTES	PB	13.08.13
A	NEW RELEASE	DB	13.05.23
REV	DESCRIPTION	BY	DATE
DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 1 OF 8
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	WIPER DEFLECTOR	NTS
DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED

ITEM	QTY -043	P/N	DESCRIPTION
	X	D4857-043	WIPER DEFLECTOR ASSEMBLY, LH
1	1	D4857-3	WIPER DEFLECTOR LH
2	1	D5117-1	GASKET
3	1	D5117-3	GASKET



D4857-043 WIPER DEFLECTOR ASSEMBLY, LH

RELEASED

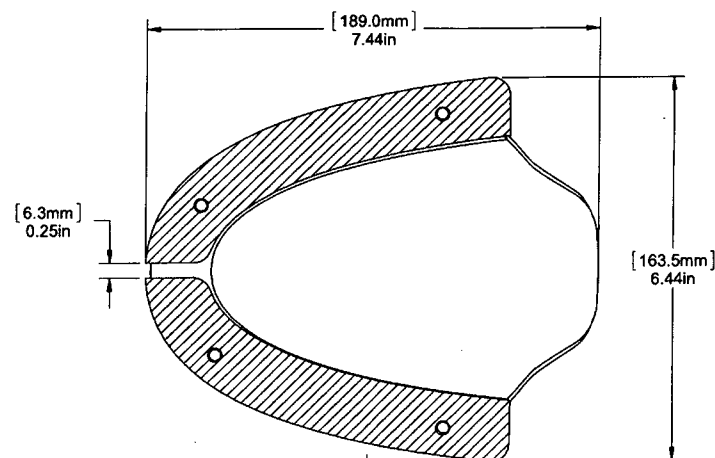
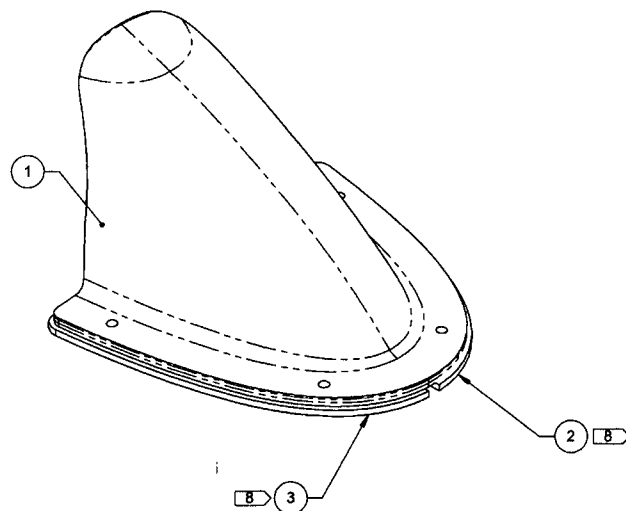
2015 JUN 08

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N D4857-043, REVISION, BATCH NUMBER, AND DATE OF MANUFACTURE, AS PER QSI 044 METHOD 6.1
- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-1/-3 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

APPROVED	DESIGN		DART AEROSPACE LTD	
	DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	CP	DRAWING NO.	REV. F
	MFG. APPR.	DD	D4857	SHEET 2 OF 8
	APPROVED	WM	TITLE	SCALE
	DE APPR.	DS	WIPER DEFLECTOR	NTS
	DATE	15.06.03	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

ITEM	QTY -044	P/N	DESCRIPTION
	X	D4857-044	WIPER DEFLECTOR ASSEMBLY, RH
1	1	D4857-4	WIPER DEFLECTOR
2	1	D5117-5	GASKET
3	1	D5117-7	GASKET



D4857-044 WIPER DEFLECTOR ASSEMBLY, RH

RELEASED

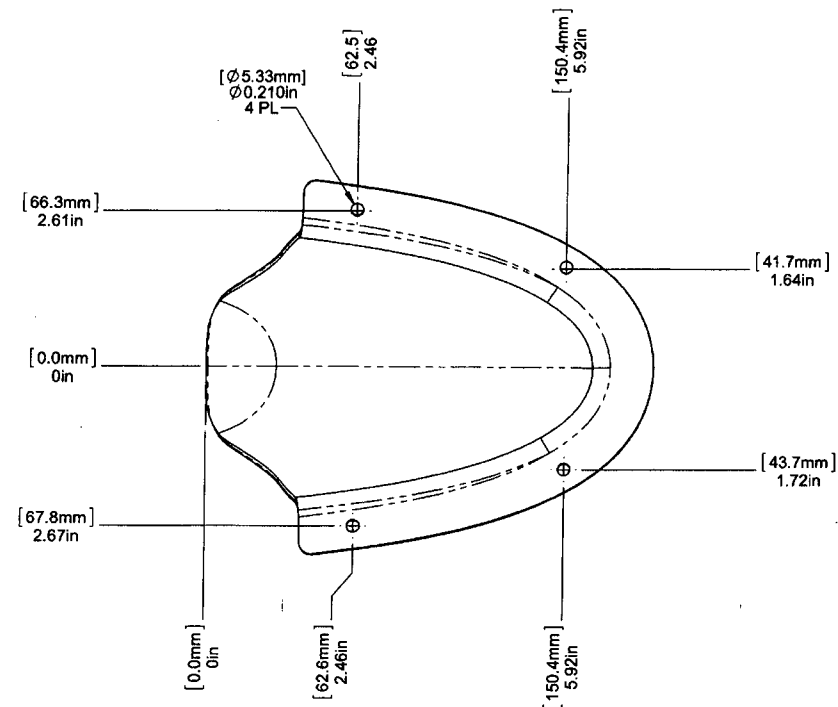
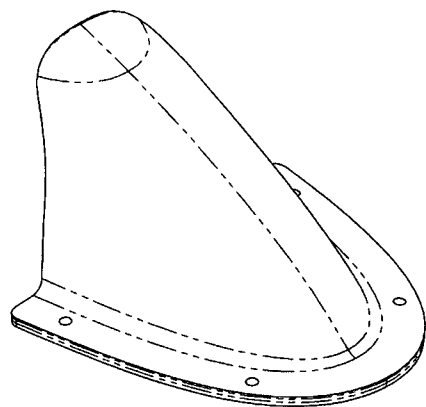
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- 7) WEIGHT: 0.38 lbs (0.17 kg)
- 8) BOND D5117-5/-7 GASKETS TO EDGE OF PART USING DOW CORNING 736 ADHESIVE

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO. D4857	REV. F
MFG. APPR.	DD		SHEET 3 OF 8
APPROVED	WM	TITLE WIPER DEFLECTOR	SCALE NTS
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DATE	15.06.03		



D4857-1 WIPER DEFLECTOR

RELEASED

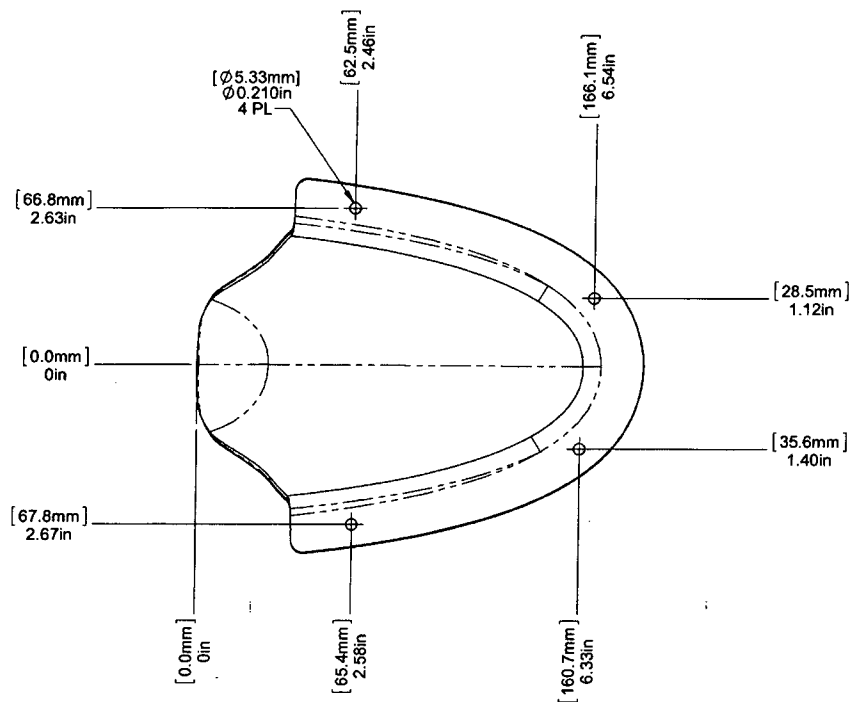
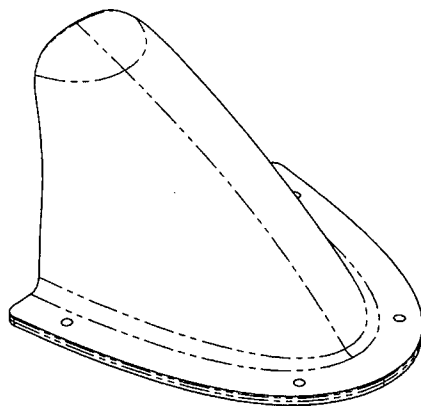
2015 JUN 08

NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-1-F.IGES

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 4 OF 8
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D4857-3 WIPER DEFLECTOR, LH

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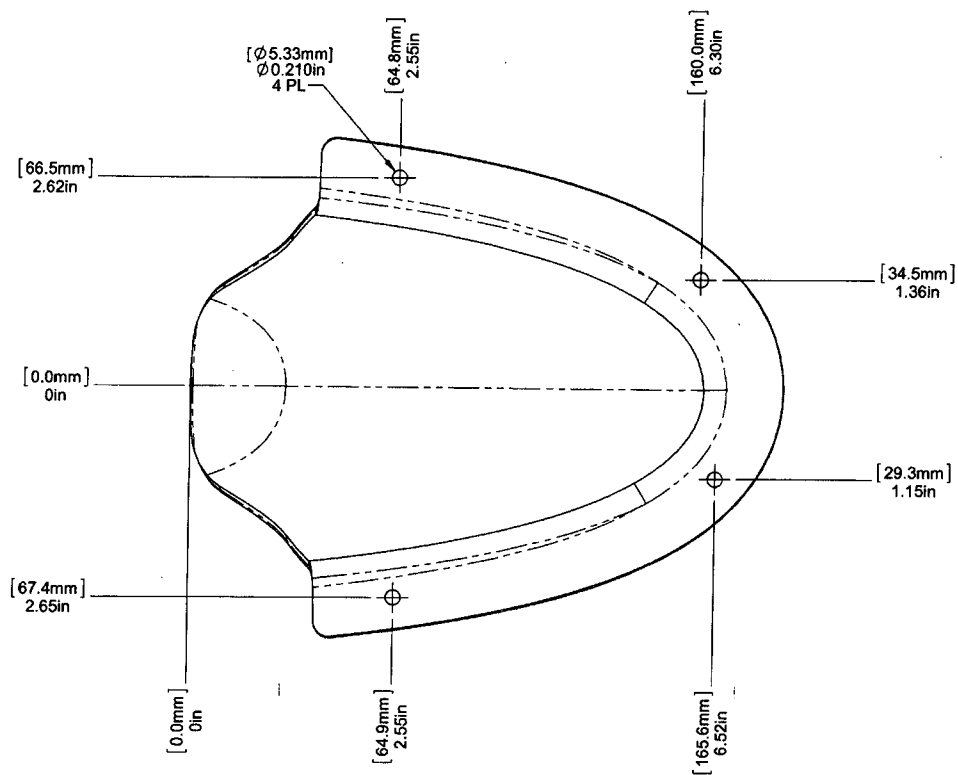
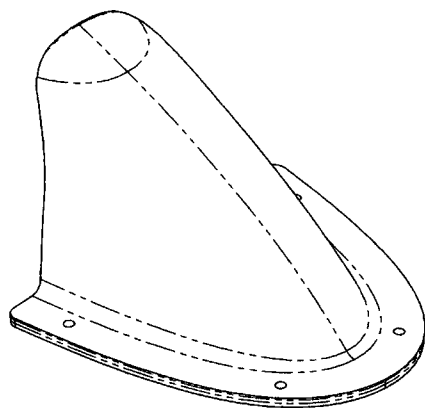
2015 JUN 08

NOTES:

- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-3-F.IGES

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MFG. APPR.	DD	D4857	SHEET 5 OF 8
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D4857-4 WIPER DEFLECTOR, RH

RELEASED

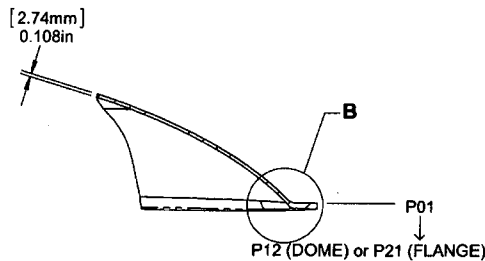
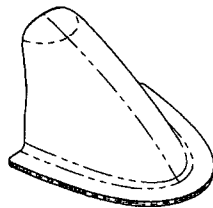
2015 JUN 08

NOTES:

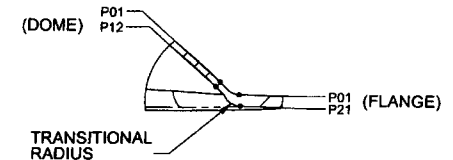
- 1) MATERIAL: MADE FROM D4857-M
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.35 lbs (0.16 kg)
- 8) PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-4-F.IGES

APPROVED

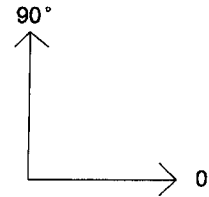
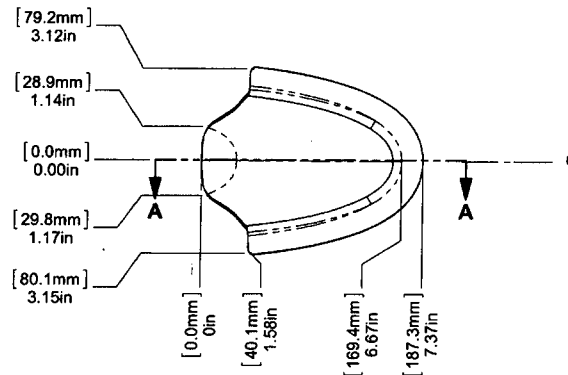
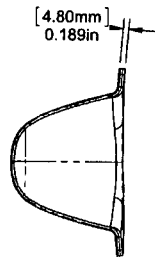
DESIGN	DW	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 6 OF 8
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SECTION A-A



DETAIL B



D4857-M WIPER DEFLECTOR

RELEASED

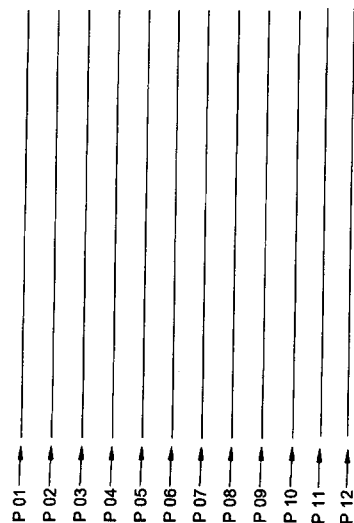
2015 JUN 08 *[Signature]*

NOTES:

- 1 MATERIAL: KEVLAR #285/353 4H SATIN, EPOXY PREPREG, 250°F CURE, 40% R/C
- 2 MATERIAL: CARBON FIBER PREPREG, ALDILA PREPREG SYSTEM 3K2X2-FR250-204/40 T300,
- 3 MATERIAL: ALDILA #120 E-GLASS AR250 WITH 48% RC;
- 4 FINISH: PRIMER IAW MIL-P-85582, 2-7 MIL MAX,
- 5 TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6 UNITS: INCHES UNLESS OTHERWISE NOTED, ALL METRIC DIMENSIONS ARE REFERENCE DIMENSIONS.
- 7 BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 8 IDENTIFICATION: N/A
- 9 WEIGHT: 0.35 lbs (0.16 kg)
- 10 PART DIMENSIONS CONTROLLED BY CAD MODEL FILE D4857-M-F.IGES
- 11 SEE SHEET 8 FOR LAYUP SCHEDULE. MANUFACTURE IAW MPP 145. CURE 250°F FOR 4 HOURS.

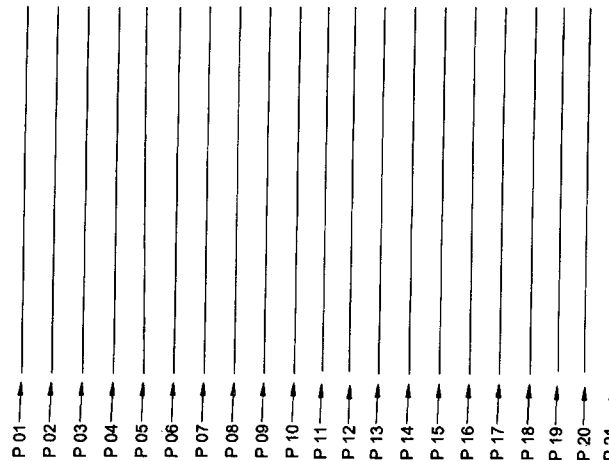
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DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO.	REV. F
MFG. APPR.	DD	D4857	SHEET 7 OF 8
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LAYUP OF LAYERS (DOME)

LAMINATE - .108in (12 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	[1]	.008-.010
02	0	[1]	.008-.010
03	90	[2]	.008-.010
04	0	[2]	.008-.010
05	90	[2]	.008-.010
06	0	[2]	.008-.010
07	90	[2]	.008-.010
08	0	[2]	.008-.010
09	90	[2]	.008-.010
10	0	[2]	.008-.010
11	90	[2]	.008-.010
12	0	[2]	.008-.010



LAYUP OF LAYERS (FLANGE)

LAMINATE - .189in (21 LAYERS)			
PLY	WARP ANGLE	MATERIAL	THICKNESS
01	90	[1]	.008-.010
02	0	[1]	.008-.010
03	90	[2]	.008-.010
04	0	[2]	.008-.010
05	90	[2]	.008-.010
06	0	[2]	.008-.010
07	90	[2]	.008-.010
08	0	[2]	.008-.010
09	90	[2]	.008-.010
10	0	[2]	.008-.010
11	90	[2]	.008-.010
12	0	[2]	.008-.010
13	90	[2]	.008-.010
14	0	[2]	.008-.010
15	90	[2]	.008-.010
16	0	[2]	.008-.010
17	90	[2]	.008-.010
18	0	[2]	.008-.010
19	90	[2]	.008-.010
20	0	[2]	.008-.010
21	90	[3]	.005

RELEASED

2015 JUN 08 *dh*

APPROVED

DESIGN	DW	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	CP	DRAWING NO. D4857	REV. F
MFG. APPR.	DD	SHEET 8 OF 8	
APPROVED	WM	TITLE	SCALE
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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO30528**

Purchase Order Date 11/20/2015 8:49:57 AM

PO Print Date 11/20/2015

Page Number 1 of 2

Order From :

VU-CBD001

Ship To : DART AEROSPACE LTD

CARBON BY DESIGN
4128 AVENIDA DE LA PLATA
OCEANSIDE, CALIFORNIA 92056
USA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAKED

Contact Name

Vendor Phone 760-643-1300

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Ship To Contact

Terms

Net 30

Ship To Phone

Currency

USD

Ship Via:

FedEx PI ppd

FOB

FCA - (Free Carrier)

Ship Acct:

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D4857-P AS PER DWG D4857 REV. F B139092	Wiper Deflector	12/16/2015 Yes 12/16/2015	FN	4.00 Each	\$695.00	\$2,780.00
Line Total:							\$2,780.00
2	71401-45	PROCUREMENT QUALITY CLAUSES	12/16/2015 No 12/16/2015		1.00	\$0.00	\$0.00
Procurement Quality Clauses A004 faa-pma/tso A005 right of entry A016 personnel qualification A025 certification of conformance A040 notification of quality escape A041 quality management A042 dart noyification by supplier A043 retention of quality documents							

PO Instructions: Fedex Acc#151793240

Note:

11/20/2015



carbon by design

4128 Avenida De La Plata - Oceanside, CA 92056

Phone: 760-643-1300 Fax: 760-643-1333

www.carbonbydesign.com

Packaging List

Date: 12/9/2015

Packaging List No. 18924

Cage Code: 4DG17

CBD Work Order No. 9077

Customer PO No.: PO30528

Billing Address:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
FedEx # 151793240

Please Deliver To:

Dart Aerospace LTD
1270 Aberdeen
Hawkesbury, ON K6A 1K7
Canada

Customer Phone	Terms	Rep	Ship Date	Ship Via
613-632-5200	Net 30	JB	12/9/2015	FedEx 2nd Day

Item	Line #	Description	Qty	U/M
120.2083	1	D4857-P, Dart Wiper Deflector S/N: 18924-1/18924-4	4	ea

SP15-12-09

Thank you for your business.

Total Items: 4 SHIPPING VALUE
\$2,780.00

CERTIFICATE OF CONFORMANCE (SHORT FORM CUSTOMERS ONLY)

I certify that on _____, the Carbon by Design LP furnished the supplies or services called for by the Purchase Order Above via Delivery in accordance with all applicable requirements.

I further certify that the supplies or services are of the quality specified and conform in all respects with the contract requirements, including specifications, drawings, preservation, packaging, packing, marking requirements, and physical item identification, and are in the quantity shown in this or on the attached acceptance document.

Quality: _____ Date: _____

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carbon by design

4128 Avenida De La Plata, Oceanside, CA 92056
Phone: 760-643-1300 Fax: 760-643-1333

www.carbonbydesign.com

Invoice

Date: 12/9/2015

Invoice # 18924

PO. No.: PO30528

Sales Order#: 9077

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
FedEx # 151793240

Please Ship To:

Dart Aerospace LTD
1270 Aberdeen
Hawkesbury, ON K6A 1K7
Canada

Customer Phone	Terms	Rep	Ship Date	Ship Via	Account Status
613-632-5200	Net 30	JB	12/9/2015	FedEx 2nd...	ww

Item	Line #	Qty	Description	U/M	Unit Price	Amount
120.2083	1	4 ✓	D4857-P, Dart Wiper Deflector S/N: 18924-1/18924-4	ea	695.00	2,780.00

2015-12-09

Thank you for your business.

Total \$2,780.00

All returns must be accompanied by a RMA #. Please call customer service at 760-643-1300 to receive a RMA number. Products damaged in shipment must be immediately documented and brought to the attention of Carbon by Design. Any products which have been installed/used are not subject to return. All returned Items, unless built to print, are subject to a 25% restocking fee. Canadian Customers are responsible for all brokerage fees, any fees not paid by the customer at the time of delivery are subject to further charges. No returns are accepted after 30 days.

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carbon by design

CERTIFICATE OF CONFORMANCE

PO: No.: PO30528	Description: Dart Wiper Deflector	Inspector: ES	Packing Slip #: 18924
Program Dart	Drawing: D4857-P Rev F	Qty : 4	Serial Numbers: 18924-1/18924-2/18924-3/18924-4

Work Requirements:

Statement of Work: See Traveler
Internal Process Doc.: See Traveler
Inspection Document: See Traveler
Manufacturing Process: Prepreg- Trapped Rubber
Security Requirement: Confidential

Approved Non-Conformances:	NO	Pending SDR/ECN:	NO
Disposition:	To Customer, Ship	Shipping method:	FedEx 2 nd Day

ITAR WARNING –This document and its attachments may contain technical data, export of which is restricted by the International Traffic in Arms Regulations (ITAR) or the Export Administration Act (EAA) of 1979, as amended. Disclosure to foreign persons without prior U.S. Government approval is prohibited. Violations of these export laws and regulations are subject to severe civil and criminal penalties.

Certification Statement: Carbon by Design LP certifies the items listed above conform to all of the applicable work and quality standard required in the purchase order listed above and any additional work requirements referenced.

All in process quality standards have been met according to customer requirements and Carbon by Design internal quality and finish requirements. All materials Certification are available for inspection and will remain on file at Carbon by Design for a period of no less than ten years.

Finished Materials/Process Specifications:

Per Drawing Requirements

Additional Quality Clauses:

Per PO Requirements, 100% Inspection

Active Quality Systems: AS 9100 Rev C, ISO9001:2008

Quality Control Representative	Title	Signature	Date
Erik Schauer	Quality Inspector		12/07/15



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	James Vasquez
Location	CDD
Customer No.	P030528
Product No.	DY857-P
Serial No.	18924-1
Classified	N/A

Serial Number-AA04

Unit Serial No.	18924-1
Roll Cert.	9333/10486/11688
QA Inspection	✓

Environment-AA02

Lab No.	Senior Spec
Lamination Start Temp.	65 ☒ °F ☐ °C
Lamination Finish Temp.	68 ☒ °F ☐ °C
Humidity	2 ☐ rising ☐ falling
Date	12-2-15 ☒ lam 12-3-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ polyester ☐ polyurethane ☐ phenolic ☐ urea ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+/-2% EW 12-7-15
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room heated ☒ oven ☐ autoclave
Tool	☐ soft carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 ☒ °F ☐ °C
P.C. Temp	260 ☒ °F ☐ °C
Cure Time	4hrs
P.C. Time	4hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	James Vasquez
Location	CBD
Customer No.	PO30528
Product No.	D4857-P
Serial No.	18924-2
Classified	N/A

Serial Number-AA04

Unit Serial No.	18924-2
Roll Cert.	7333/10486/11682
QA Inspection	✓

Environment-AA02

Lab No.	Senior Spear
Lamination Start Temp.	66 ☒ °F ☐ °C
Lamination Finish Temp.	69 ☒ °F ☐ °C
Humidity	2 ☐ rising ☐ falling
Date	12-3-15 ☒ lam 12-4-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyurethane ☐ phenolic ☐ urea ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Epoxy Content	40 1/2 %
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RTM ☐ HP Bladder
Cure	☐ room ☐ heated ☒ oven ☐ autoclave
Tool	☐ soft ☐ carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 ☒ °F ☐ °C
P.C. Temp	260 ☒ °F ☐ °C
Cure Time	4 hrs
P.C. Time	4 hrs
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	James Vasquez
Location	2BD
Customer No.	PO30528
Product No.	D4857-P
Serial No.	18924-3
Classified	N/A

Serial Number-AA04

Unit Serial No.	18924-3
Roll Cert.	9323/10486/11688
QA Inspection	<i>[Signature]</i>

Environment-AA02

Lab No.	Senior Spear
Lamination Start Temp.	66 ☒ °F ☐ °C
Lamination Finish Temp.	69 ☒ °F ☐ °C
Humidity	2 ☐ rising ☐ falling
Date	12-4-15 ☒ lam 12-5-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ phenolic ☐ flex ☐ other		
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other	Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40+/- %	Type	☐ Cosmetic ☒ Structural ☐ Multi Load

[Signature] 12-7-15

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ RIM ☐ HP Bladder		
Cure	☐ room heated ☒ oven ☐ autoclave	Tool	☐ soft carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 ☒ °F ☐ °C	P.C. Temp	260 ☒ °F ☐ °C
Cure Time	4 hrs	P.C. Time	4 hrs
Release	☐ wax ☒ semi-perm	Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

APPENDIX B

Layup Schedule Record

Laminator-AA01

Laminator	James Wagner
Location	CBD
Customer No.	A030528
Product No.	D4857-P
Serial No.	18924-4
Classified	N/A

Serial Number-AA04

Link Serial No.	18924-4
Roll Cert.	9333/10486/11688
QA Inspection	✓

Environment-AA02

Lab No.	Senior Spear
Lamination Start Temp.	67 ☒ °F ☐ °C
Lamination Finish Temp.	70 ☒ °F ☐ °C
Humidity	2 ☐ rising ☐ falling
Date	12-5-15 ☒ lam 12-6-15 ☒ fin

Lamination-AA05

Resin System	☒ epoxy ☐ vinyl ester ☐ polyester ☐ polyurethane ☐ flex ☐ other
Epoxy	☐ 574A ☐ 2932A ☐ 2110A ☒ Other
Hardener	☐ 734B ☐ 974B ☐ 8992B ☒ Other
Fiber Content	40 ± 2 %
Type	☐ Cosmetic ☒ Structural ☐ Multi Load

12-7-15

Process-AA03

Process Type	☐ open mold ☐ vac bag ☐ VARTM ☒ prepreg ☐ R/TM ☐ HP Bladder
Cure	☐ room ☐ heated ☒ oven ☐ autoclave
Tool	☐ soft ☐ carbon ☒ aluminum ☐ REN ☐ Foam
Cure Temp	260 ☒ °F ☐ °C
Cure Time	46 ☒ P.C. Time
Release	☐ wax ☒ semi-perm
Degas	☒ yes ☐ no



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

Laminate #1

Appendix B – Layup Schedule Record

LAYER 1	☐ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°	LAYER 7	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 2	☐ Carbon ☒ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 8	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 3	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°	LAYER 9	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 4	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 10	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 5	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°	LAYER 11	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 6	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 12	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☒ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre

DART

AEROSPACE

SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

DOCUMENT NO:
MPP-145
Rev. A
02/27/15

Laminates #2

Appendix B – Layup Schedule Record

LAYER 1	☐ Carbon	<u>Material Size</u> x	☐ 0°	LAYER 7	☒ Carbon	<u>Material Size</u> x	☐ 0°
	☒ Kevlar		☒ 90°		☒ Kevlar		☐ 90°
	☐ S2 Glass		☐ 45°		☐ S2 Glass		☐ 45°
	☐ E Glass		☐ -45°		☐ E Glass		☐ -45°
	☒ Twill 2x2	☐ 3k ☐ 12k	☐ dry ☒ pre		☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre
	☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre
	☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre
LAYER 2	☐ Carbon	<u>Material Size</u> x	☒ 0°	LAYER 8	☒ Carbon	<u>Material Size</u> x	☒ 0°
	☒ Kevlar		☐ 90°		☒ Kevlar		☐ 90°
	☐ S2 Glass		☐ 45°		☐ S2 Glass		☐ 45°
	☐ E Glass		☐ -45°		☐ E Glass		☐ -45°
	☒ Twill 2x2	☐ 3k ☐ 12k	☐ dry ☒ pre		☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre
	☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre
	☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre
LAYER 3	☒ Carbon	<u>Material Size</u> x	☒ 0°	LAYER 9	☒ Carbon	<u>Material Size</u> x	☐ 0°
	☐ Kevlar		☒ 90°		☐ Kevlar		☒ 90°
	☐ S2 Glass		☐ 45°		☐ S2 Glass		☐ 45°
	☐ E Glass		☐ -45°		☐ E Glass		☐ -45°
	☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre		☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre
	☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre
	☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre
LAYER 4	☒ Carbon	<u>Material Size</u> x	☐ 0°	LAYER 10	☒ Carbon	<u>Material Size</u> x	☒ 0°
	☐ Kevlar		☐ 90°		☐ Kevlar		☐ 90°
	☐ S2 Glass		☐ 45°		☐ S2 Glass		☐ 45°
	☐ E Glass		☐ -45°		☐ E Glass		☐ -45°
	☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre		☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre
	☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre
	☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre
LAYER 5	☒ Carbon	<u>Material Size</u> x	☒ 0°	LAYER 11	☒ Carbon	<u>Material Size</u> x	☐ 0°
	☐ Kevlar		☐ 90°		☐ Kevlar		☒ 90°
	☐ S2 Glass		☐ 45°		☐ S2 Glass		☐ 45°
	☐ E Glass		☐ -45°		☐ E Glass		☐ -45°
	☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre		☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre
	☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre
	☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre
LAYER 6	☒ Carbon	<u>Material Size</u> x	☒ 0°	LAYER 12	☒ Carbon	<u>Material Size</u> x	☐ 0°
	☐ Kevlar		☐ 90°		☐ Kevlar		☐ 90°
	☐ S2 Glass		☐ 45°		☐ S2 Glass		☐ 45°
	☐ E Glass		☐ -45°		☐ E Glass		☐ -45°
	☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre		☒ Twill 2x2	☒ 3k ☐ 12k	☐ dry ☒ pre
	☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ Uni	☐ 3k ☐ 12k	☐ dry ☐ pre
	☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre		☐ 5HS	☐ 3k ☐ 12k	☐ dry ☐ pre



SUBJECT:
MANUFACTURING PROCESS PROCEDURE
MANUFACTURING COMPOSITE COMPONENTS

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Rev. A
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Laminates #2

Appendix B – Layup Schedule Record

LAYER 13	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 20	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 14	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 21	☐ Carbon ☐ Kevlar ☐ S2 Glass ☒ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☒ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 15	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 22	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 16	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 23	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 17	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 24	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 18	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 25	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre
LAYER 19	☒ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☒ 0° ☐ 90° ☐ 45° ☐ -45°	LAYER 26	☐ Carbon ☐ Kevlar ☐ S2 Glass ☐ E Glass	<u>Material Size</u> x	☐ 0° ☐ 90° ☐ 45° ☐ -45°
	☒ Twill 2x2 ☐ Uni ☐ 5HS	☒ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☒ pre ☐ dry ☐ pre ☐ dry ☐ pre		☐ Twill 2x2 ☐ Uni ☐ 5HS	☐ 3k ☐ 12k ☐ 3k ☐ 12k ☐ 3k ☐ 12k	☐ dry ☐ pre ☐ dry ☐ pre ☐ dry ☐ pre



CERTIFICATE OF CONFORMANCE

Aldila Composite Materials hereby certifies that the materials or parts referenced below conform to all applicable requirements and specifications per the customer purchase order as noted. Any exception shall be itemized.

CUSTOMER	CARBON BY DESIGN
CUSTOMER PO NUMBER	9333
ACM SO NUMBER	501015
PRODUCT	120-AR250C-107/42 (1SP), 50"
CUSTOMER PART#	550.0140
ACM ITEM #	060937
BATCH	15-0121
ROLLS	1
TOTAL QUANTITY	310.0 LFT, 1292 SF
MFG DATE	2/5/2015
SHIPMENT DATE	2/10/2015
WARRANTY	at 0°F FOR 12 MONTHS
EXPIRATION DATE	2/5/2016

QUALITY ASSURANCE REPRESENTATIVE:

NAME: FREDERICK F. SAREMI

SIGNATURE:  DATE: 2/10/2015

CERTIFICATE OF CONFORMANCE

Aldila Composite Materials hereby certifies that the materials or parts referenced below conform to all applicable requirements and specifications per the customer purchase order as noted. Any exception shall be itemized.

CUSTOMER	CARBON BY DESIGN
CUSTOMER PO NUMBER	10486
ACM SO NUMBER	501290
PRODUCT	3K2X2-FR250B-204/40 (2SP), 50"
CUSTOMER PART#	602.0001
ACM ITEM #	076903
BATCH	15-1170
ROLLS	1, 2
TOTAL QUANTITY	273 LFT, 1138 SF
MFG DATE	10/13/2015
SHIPMENT DATE	10/19/2015
WARRANTY	at 0°F FOR 6 MONTHS
EXPIRATION DATE	4/10/2016

QUALITY ASSURANCE REPRESENTATIVE:

NAME: FREDERICK F. SAREMI

SIGNATURE: _____

DATE: _____

10/19/2015



2320 Pullman St.
Santa Ana, CA 92705

(949) 623-4400 Ph.
(949) 261-6009 Fx.

CERTIFICATE OF CONFORMANCE

- SECOND RECERTIFICATION -

CUSTOMER: CARBON BY DESIGN

Purchase Order Number: 9453

Sales Order Number: 11688

Product: AX-4112-285-50" RC38

Description: High Toughness, Flame Retardant

Description (ctd): Epoxy Aramid Prepreg

Batch Number: 91

Recertification Date: 12/3/2015

Warranty Expiration Date: 3/3/2016

Date of Manufacture: 2/17/2015

Storage Temperature: 40°F or below

Sales Order Quantity: 100 yd

Production Quantity: 100 yd

Test Report

Test	Requirement	Result	Test Method
Weight/psf	0.056 +/- 0.003	0.054	ATS-001
Volatiles/%	Report	1.808	ATS-002
Gel Time/second	Report	287	ATS-003
Flow/%	Report	4.241	ATS-004
Resin Content/%	38 +/- 4	35.088	ATS-005
Production Standard	Requirement		Test Method
Visual Inspection	Pass	Pass	ATS-013
Tack Level / Number	Medium / 3	Medium / 3	ATS-015
Nominal Core Diameter	6"	6"	ATS-013
Sides Coated	Two	Two	ATS-013
Color	Natural	Natural	ATS-013
Liner Configuration	White Paper / 2.5 mil Red Poly	White Paper / 2.5 mil Red Poly	ATS-013

This document certifies material supplied to this order to the following requirements:

Purchase order terms and conditions

Axiom Test Standards (where applicable)

All terms and conditions of the Purchase Order Agreement

Specifications as noted below

Specification(s):

Axiom Test Standard

Recertified in accordance with:

Axiom Materials Quality Procedure AQP-020

Customer Purchase Order No. 10667

Sales Order No. 14581



Digitally signed by
Edwin Martir
Date: 2015.12.03
11:48:04 -08'00'

Signature of Authorized Agent

F-751-1 Rev A

PRC-DeSoto International, Inc.

PPG Aerospace - Deft

17451 VON KARMAN AVE, IRVINE,

CA 92614-6295

Phone No.: (800) 544-3338 or

(949) 474-0400

Cust No. 771015

Bill-To: 771015B09

PRC ASC LOS ANGELES

Do not mail invoices:

aerospace_apinvoices@ppg.com

roxanne.rowe@ppg.com

CA 91342 USA

Phone: 818/549-7726

Ship-To: 7710150467

CARBON BY DESIGN

4128 AVENIDA DE LA PLATA

OCEANSIDE, CA 92056 USA

Phone:

Certificate of Conformance

Pick List: P454476

Branch: BINT

Sales Order No.: S 7623

Total Cartons: .00

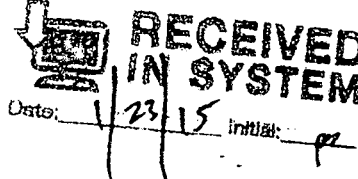
Customer P.O. LAD11085

Contract/Credit Auth

Number:

Mark For: FX ACCT# 573438523

CSR: JSR



Remarks:

Order Date: 01/20/2015 Ship Date: 01/22/2015 Terms: Net 30 Days Freight Term: Freight Collect Service: ValleryR

Line: 01/20/2015 01/22/2015 Net 30 Days Freight Collect Fedex Freight ValleryR

Line: 01/20/2015 01/22/2015 Net 30 Days Freight Collect Fedex Freight ValleryR

1 8 44GN098 1GK MIL-PRF-85582E, TYPE I, CLASS N, 1-STEP EA 8

MIX GALLON KIT

LMA-MR003E TYPE II CLASS 2 GRADE A; 5PTMRT09C

GRADE B; H MS 15-1100 TYPE I CLASS 2 GRADE N; PWA

36515C-3 and FMS 3027C FORM 3

P/N: DE44GN098XZZG2ST

Customer PO: 9312

Lot Number:

102728/102729

8

DOM:

June 2014DOE: 6/2016 DOM of Repack:

DOE of Repack:

Total Cartons: .00

Picked By:

Checked By:

1/21/2015

PPG Aerospace/PRC DeSoto International certifies that the above materials have been manufactured, tested and conforms to all requirements in accordance with applicable specifications. All test data pertaining to batch acceptance requirements defined by the specification for this material is on file and available for inspection upon request. For Non-US PPG Customers, we can only offer Technical Data/Test Reports for any ITAR or EAR restricted specifications with valid US export authorization

Christopher Tafel

Christopher Tafel - Quality Assurance Specialist